

APPLICATION FOR UNITED STATES LETTERS PATENT

FOR

**METHOD AND APPARATUS FOR  
SUPPLEMENTING MAILING TRANSACTION COSTS**

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**METHOD AND APPARATUS FOR  
SUPPLEMENTING MAILING TRANSACTION COSTS**

RELATED APPLICATIONS

5           The present application is a continuation-in-part application of (a) U.S. Patent Application No. 09/581,306, which is national application of PCT Patent Application No. PCT/US00/07093, filed March 17, 2000, which claims priority to U.S. Provisional Application No. 60/125,260, filed on March 19, 1999. These applications are all hereby fully incorporated by reference.

10           FIELD OF THE INVENTION

          The present invention relates to the fields of mass mailing and electronic advertising. More specifically, the present invention relates to supplementing mailing transaction costs with third party advertisements.

15           BACKGROUND OF THE INVENTION

          With advances in integrated circuit, microprocessor, networking and communication technologies, increasing number of devices, in particular, digital computing devices, are being interconnected together. The increased  
20   interconnectivity of computing devices have let to wide spread adoption of various network dependent applications, such as e-mail and the world wide web.

          Along with this increased interconnectivity comes increased usage of the interconnecting communication devices to send and receive communications. Often

times, a sender may send a message to a group of more than one recipient at one time. Provided that the message to the group is sent electronically as an e-mail message and the recipients of the group are able to receive the message electronically as e-mail message as well, sending the message to the group is

5 relatively simple and inexpensive. However, if the group was to receive the message in a physical form, the costs associated with sending the message to the group can be very high.

For example, even with the availability of e-mail, often times, a sender of a Christmas letter will send the letter by physical mail ("snail mail") because of the

10 traditional and personal nature of the Christmas letter. Depending upon the number of family and friends, the costs associated with sending the Christmas letter by "snail mail" may be very high because of the paper, envelopes, and stamps associated with "snail mail".

Another example would be a doctor's office sending mailings to a number of

15 patients to inform them of information regarding the doctor's practice, such as, for example, a move of the offices and so forth.

Both examples require the need to send a single message to a large number of people as physical mailings increasing the costs associated with the mailing transaction.

20 Accordingly, a need remains for a mailing system that integrates the advantages of both the Internet and the Web (World Wide Web) with that of the more traditional mail services to improve the dissemination of information from a

sender to a large number of recipients while supplementing the costs associated with the mailing transaction for the sender.

#### BRIEF DESCRIPTION OF THE DRAWINGS

5 The invention is illustrated by way of example and not by way of limitation in the figures of the accompanying drawings, in which the like references indicate similar elements and in which:

**FIG. 1** is a block diagram illustrating an electronic message to physical mail delivery **25** system according to a preferred embodiment of the invention;

**FIG. 2** is a block diagram of software components of the Zairmail system;

10 **FIG. 3** is a flow diagram of the query engine shown in **FIG. 2** adapted to select an appropriate local production facility (LPF) according to a preferred embodiment of the invention;

**FIG. 4** is a block diagram of software components of the Zairmail mail object compiler **30** implemented according to a preferred embodiment of the invention;

15 **FIG. 5** is a flow diagram illustrating the process steps for selecting appropriate directed advertising content to include within the mail object;

**FIG. 6A-6E** are lists of advertisers sorted according to one embodiment of the invention;

20 **FIG. 7 A- 7D** illustrate different arrangements in which advertisements can be placed on according to the invention;

**FIG. 8** is a block diagram of an LPF according to a preferred embodiment of the invention;

**FIGS. 9A-9E** illustrate an example end user interface suitable for use to practice the e-mail sender aspect of one embodiment of the present invention for supplementing mailing costs;

**FIG. 10** illustrates an address table suitable for sending a message to a number of recipients included within a group, in accordance with one embodiment of the present invention;

**FIG. 11** illustrates a number of sample tables suitable for storing the previously described category, advertiser, advertisement information, and values associated with each of the advertisement information, for practicing the present invention, in accordance with one embodiment; and

**FIG. 12** illustrates the operational flow of the relevant aspects for supplementing the costs associated with mailing a message by inserting advertisements into the message, in accordance with one embodiment of the present invention.

## DETAILED DESCRIPTION OF THE INVENTION

In the following description, various aspects of the invention will be described. However, it will be apparent to those skilled in the art that the invention may be practiced with only some or all aspects of the invention. For purposes of explanation, 5 specific numbers, materials and configurations are set forth in order to provide a thorough understanding of the invention. However, it will also be apparent to one skilled in the art that the invention may be practiced without the specific details. In other instances, well known features are omitted or simplified in order not to obscure the invention.

10 Parts of the description will be presented in terms of operations performed by a computer system, using terms such as data, flags, bits, values, characters, strings, numbers and the like, consistent with the manner commonly employed by those skilled in the art to convey the substance of their work to others skilled in the art. As well understood by those skilled in the art, these quantities take the form of electrical, 15 magnetic, or optical signals capable of being stored, transferred, combined, and otherwise manipulated through mechanical and electrical components of the computer system, and the term computer system include general purpose as well as special purpose data processing machines, systems, and the like, that are standalone, adjunct or embedded.

20 Various operations will be described as multiple discrete steps in turn, in a manner that is most helpful in understanding the invention, however, the order of description should not be construed as to imply that these operations are necessarily

order dependent. In particular, these operations need not be performed in the order of presentation.

**FIG. 1** is a block diagram of an electronic message to physical mail delivery system **10** implemented according to a preferred embodiment of the invention. The system contemplates a mail sender **12** preparing an electronic message which is then processed, shunted to an appropriate printing facility (chosen based on such attributes as proximity to the intended recipient of the message, capacity, capability, etc.), and then printed out by system **14** (Zairmail system). A printed mail object including the message is then delivered to the postal service **16** or other like organization/company for physical delivery of the printed object to the intended mail recipient **18**. Although the invention is directed primarily to traditional printed messages, the system herein described can be used in conjunction with any items on which specified printed materials appear, such as T-shirts, posters, mugs, etc.

System **10** contemplates supplementing mailing costs through advertising content from advertisers **20** placed within the printed mail object. The selection and placement of appropriate advertisements within the printed message forms an additional portion of the inventive physical mail delivery system **10** and is described in more detail below with reference to **FIGS. 5, 6A-6E, and 7A-7D**. Further content can be added to the message supplied from value-added content providers **22**. The value-added content to the message can for example include limited edition artwork, joke or cartoon of the day, crossword puzzles, and others. As contemplated within an embodiment of the invention, the mail sender **12** can accumulate points for using

the Zairmail system which can then be exchanged for goods or services, as from gift supply partners **24**, advertisers **20**, or others.

The mail sender **12** can compose and send messages electronically to the Zairmail system **14** in three different formats. Referring to **FIG. 2**, the message can  
5 be intercepted at an intermediate node such as message transfer handler **26** of the Zairmail system **14** by an e-mail subsystem **28**, via web site interface **30**, or through the printer driver interface **31**.

Turning first to the e-mail interface, a user composes an e-mail message and addresses the e-mail to a recipient at a particular domain, e.g. recipient id "mom" at  
10 e-mail domain "zairmail.com". The e-mail message sender is identified by the "From" line of the e-mail message and the recipient's physical address and other demographic statistics are looked up in a user database **32**. The particulars of this type of physical address look-up system are not disclosed here as such a system can be constructed with reference to U.S. Patent No. 5,805,810.

15 The second type of interface contemplates a mail sender logging onto a Web site located on a server of the Zairmail system **14**. The mail sender can store a personalized address book within a user database **32** for use and retrieval later. Once logged on to the system, the user is presented with a blank form in which he or she can designate a recipient, the text of the message, select whether and which  
20 advertisements to include within the printed mail object, select whether to send printable coupons, and other items. Delivery options, such as certified mail, registered mail, overnight or immediate delivery, or message archiving, can also be specified by the Zairmail system user.



The printer driver interface **31** interacts with printer drivers downloaded to the user's machine. Any printing to the devices represented by Zairmail printer drivers will be sent to the printer driver interface for processing. The users can use anyone of their desktop applications to compose a message, and print it to the Zairmail  
5 printer. When the user is connected to the Internet, the Zairmail printer drivers will then connect to the printer driver interface **31** and transmit the message on to service pod **34**.

The service pod **34** operates to select the appropriate Local Production Facility (LPF) to which the electronic message is shunted and ultimately printed out  
10 for mailing with the U.S. Post Office or similar physical mail delivery service. The service pod includes user database **32**, a recipient database **36** and a query engine **38**. The user database **32** includes address book information for the mail sender **12** in order to generate physical address information used by the query engine. The user database can store archived messages sent over a particular time period. The  
15 recipient database **36** includes information on the recipient such as personal demographics and whether that particular recipient has opted to block messages sent through the Zairmail system **14**, block certain advertisements from being attached to messages sent through the Zairmail system, or block messages sent from a particular user of the Zairmail system. Demographic information for the  
20 receiver is compiled internally, as by querying the receiver's profile as listed within the user database **32**, and externally from external data sources such as those available through Experian Information Solutions, Inc. Information within the recipient database is periodically queried to generate accompanying printed material

with the electronic message, such as directed advertisements, as discussed further below.

Query engine 38 operates to query distributed LPFs, such as LPF 40 and 42, geographically separated within LPF space 44, and determine their appropriateness for the job of printing the electronic message in physical form. By way of example, LPF 40 may be located in San Francisco while LPF 42 may be located in New York City. In the alternative, the LPFs may be located in different countries so that an electronic message originating within one country can be printed and mailed in the recipient's country in order to avoid air-mail charges. Mail printed and mailed at a post office proximate to the recipient's physical address will often result in improved delivery times since cross-country transport of the physical mail object would not then be necessary. In this way, the electronic message may be quickly and inexpensively delivered via a physical mail delivery system.

It must be noted that the actual physical proximity of the LPFs to the destination address may not actually result in the fastest delivery time. There may be expedited means of transferring mail from other LPFs to the destination, based on perhaps scheduled point-to-point flights from LPF location to the destination location. So, if the messages are printed in an LPF within the cutoff time of reaching the scheduled flight, we might be able to deliver the messages faster than sending the message to an LPF that would miss the next day delivery deadlines.

FIG. 3 illustrates steps undertaken by the query engine 38 to determine the most appropriate LPF. A candidate list of possible LPFs is compiled in step 46. These are LPFs with the type of equipment available, such as shown in FIG. 8, to

communicate with the mail object builder **92** of **FIG. 4** and are typically included within a static table stored within memory of the query engine. The list can be further limited to only those LPFs within a certain distance of the recipient's address or some other factor such as expedited delivery mechanisms. The query engine **38**

5 then queries each candidate LPF to determine whether it is appropriate for the printing job. The first LPF candidate is queried in step **48**. The query is a request for information regarding the current capacity and capabilities of the LPF-attributes that may change over time and cannot necessarily be quantified in a static table. The first LPF is given a certain amount of time to respond to the electronic query in

10 step **50**. If it does not respond within the allotted time, the LPF is taken off the candidate list in step **52**. If it does respond, then the requested information is retrieved in step **54**, and processed in later steps to determine a "goodness factor" as disclosed below. If not all LPFs on the list have been queried as determined within step **56**, then the process moves to step **58** in which the next LPF on the list is

15 queried. The process continues until a modified candidate list is generated and information from each of the LPFs on the list retrieved. If it is determined in step **56** that all LPFs on the candidate list have been queried, then the process moves to step **60**. All LPFs can likewise be queried simultaneously using a message broadcast to each of the LPFs so that development of the modified candidate list can

20 be done in parallel.

In step **60**, a "goodness factor" is determined for each LPF on the modified candidate list based upon attributes of the LPF that might affect that LPF's ability to successfully carry out the requested print job on time. Examples of such attributes

include proximity to the deliver point (zip code), the capability of the printers and other facilities in the LPF (can it actually do the job, e.g., print materials [paper, T-shirts, posters] with the appropriate color and size available), the LPF capacity (the estimated lag time for job completion), the cost bid by the LPF per impression, and

5 the shipping capability to the post office (how fast the printed mail object can be delivered to the post office). The ideal LPF would be the closest, physically or by means of expedited delivery mechanisms, to one to the final destination with the right equipment and supplies to complete the job and a very low time-to-print lag.

Less desirable LPF factors that are communicated to the query engine responsive to

10 the LPF query can include situations where the LPF is down either because of equipment failure or connectivity problems, the LPF may be loaded down with lots of jobs, the LPF may not have the proper facilities and/or supplies to complete the print job, and the vehicles and people may not be available to deliver the messages to the Post Office. An enhanced implementation of an LPF selection for larger jobs could  
15 be that LPFs may compete for a particular job based on available (otherwise wasted) capacity and capability as well as having "insert" advertisements that need to be sent for high-paying advertisers.

The cost attribute can be changed by the LPF operator via a web interface with service pod **34** to change one or more static attributes stored within and  
20 considered by the query engine **38** when selecting the appropriate LPF to send the print order to. In the alternative, the LPF operator can enter or modify the cost attribute (e.g. the amount of money the LPF will charge to complete a certain task such as printing a full color, two-sided greeting card, sorting, processing, stamping,

and delivering to the Post Office) locally at the LPF server 96, which communicates with the service pod 34. The LPF attributes are stored within an attribute database at the LPF server responsive to automatic queries within the local network of equipment at the LPF site as well as manually entered data. For instance, if an LPF facility is running at low capacity, the LPF operator can lower his bid to complete certain types of jobs, thereby increasing his LPF's goodness factor and improving the chance that his LPF will be selected to perform a certain print command by the query engine 38.

Once the goodness factor has been calculated for each LPF in step 60, the LPFs on the modified candidate list are sorted in step 62 to determine the LPF with the highest goodness factor - that is, the most appropriate LPF for the print job and delivery of the printed mail object to the post office. The print order (compiled according to the methods and systems described below) is then sent electronically to the top ranked LPF in step 64.

The advantage of such a querying system over prior art systems, such as in U.S. Patent No. 5,805,810, is that many dynamic factors can be taken into consideration before shunting the print order to the appropriate LPF. In this was, the present system will not send messages for printing to print facilities that are off-line, without capacity, or without the capabilities to carry out the job. The NetGram-based transmission system, for instance, will keep attempting to deliver to the off-line print facility until the facility is again operational or a time-out occurs, in which case the message may not ultimately be delivered, or delivered late.

**FIG. 4** illustrates in block diagrams the components for building the mail object. The ad compiler is shown at **66** and includes an advertisement image database **68**, an advertisement ID database **70**, ad counter **72**, and an ad selector **74**. The advertisement image database **68** stores the graphical representations of advertisements and can be accessed and updated with new images by advertiser users with the proper permissions as described in more detail below. The advertisement ID database associates in a lookup table each image with an ID number so that when the mail object is constructed and electronically transmitted to the LPF for printing, the size of the transmitted mail object can be reduced since the ID and not the graphic image file only need be transmitted. As will be appreciated, the graphic images are stored locally at the LPFs so that the proper images can be substituted where indicated by the ID immediately prior to printing. The ad counter **72** compiles statistics from the ad selector to keep track of how many of each advertisement is used and to complete accounting so that the particular advertiser can be charged.

The ad compiler is coupled to an ad order processor **76** that operates as follows. A participating advertiser will login and the Zairmail system will authenticate their user ID and password. Each advertiser can have multiple groups, each with different permissions. Each group can further have multiple users, each of those with different permissions. Permissions will apply on a personal, group, or advertiser basis. Within each of these groups, "read", "modify", "delete", and "order" permissions will be available. Each advertiser must have at least one super-user - a user who has full privilege to read, modify, delete, or order. The super-user is

responsible for adding or deleting users, and assigning permissions, for pre-approved corporate accounts. An advertiser user can, with the proper permissions, place or change orders corresponding to the preferred target market the advertiser would like to direct their marketing to, the price they are willing to pay for advertising directly to a particular mail recipient (supplementing the mailing costs), or to change the advertising graphics stored within the ad image database **68**. The advertising user can select demographic variables, time frames in which the advertisement is active, and the maximum number of impressions per receiver and over a particular time-frame. By way of example, an advertiser for a luxury car company can choose to advertise only to those individuals living in ZIP codes wherein the average home prices is over \$300,000. By using both internal and external databases, such limitations can be addressed. Advertiser-set limits are stored within the ad selector **74** and used in the processing steps discussed below to select the most appropriate and lucrative advertising content to include within the mail object.

The ad selector **74** operates in conjunction with the advertisement databases **68**, **70** and ad counter **72** to determine which advertisements will be printed. The ad selector can also operate in conjunction with the recipient database to prevent repeat impressions of the same advertisement with the same recipient within a certain period of time. One method for selecting advertisements is shown in **FIG. 5** in which the universe of ready advertisements stored in the system are identified in step **78**. These ready advertisements are those that have not expired, with a current print count stored within the counter **72** less than the print count paid for by the advertiser. Each advertisement has a base priority associated with it (step **80**) that,

for instance, can be based on how much the advertiser has paid for the space. The higher the amount paid, the higher the priority. Size of the advertisement can be factored in to this base priority as well as well as factors considering whether certain ads are set to expire sooner than others (so that the ad limits can be used prior to expiration). This base priority can be modified in step **82** according to how closely the mail recipient **18** matches the target market pre-selected by the advertiser through the ad order processor **76**. The ready ads are sorted by their modified priority in step **84** to yield a modified ad list.

Finally, the ads on the modified ad list are sorted a second time by ad affinity in step **86**. Ad affinity operates by, for instance, looking at the ads located above and below the particular ad on the modified list and apply pre-established factors based, not on the designated mail recipient, but on the advertisements that would also appear on the mail object with the one ad. For instance, the listing of an advertisement for a clothing store in the top slot of the modified list may act to negatively affect the co-listing on the mail object of an ad for a competing clothing store. Likewise, an ad for a health food store can elect not to ever be listed with advertisements for alcohol or tobacco products. Ad affinity can also be established to positively influence the chance that a certain type of advertisement, such as a car rental ad, will be paired with another type of ad, such as an airline ad, in either the same mail object or to the same recipient over a period of time.

Other factors that can affect the priority is the willingness of an advertiser to "bid-up" for a spot -meaning whether an advertiser has indicated within the ad order processor **76** that placement of certain ads to certain types of people are worth more



than others. This is indicated as one of the attributes of the advertisement as well as what the bid increments are and the ceiling value for the bid. If no ads match the demographics for a particular recipient, the ad compiler **86** operates in one embodiment of the invention to pick from low-priority or default advertisers that pay very little or non-profit, community service or interesting articles, that are willing to wait until no other high-paying ads are competing for the space.

One issue that may occur under the present system is starvation -that is, the chance that certain low-bid ads will never be printed and may be intentionally locked out by competing advertisers. A "fairness" routine is then employed by the ad compiler **66** to ensure that a few number of very high-paying advertisers cannot block other advertisements from being printed. One example of an implementation of the fairness routing is where the base priority of all losing advertisements are incremented so that their chance of being chosen in a subsequent selection round is increased. An alternative is providing a "rest-period" for advertisements, where after a certain number of "wins", the advertisements are taken out of the ready advertisements group and are required to rest for a few rounds before they are again qualified to participate in the ad selection process.

Once the modified list is reorganized by factoring in ad affinity, then the appropriate number of ads are selected and placed on the mail object document in step **88** and the ad counter **72** is updated in step **90** to reflect that certain ads were used. It should be noted that similar ad selection processes can be used in selecting advertisements for display on a web page, as in a banner ad, and should not be limited simply to print advertisements.

The tables in **FIGS. 6A-6E** illustrate how ad affinity may be. Applied according to one embodiment of the invention. A basic ad list, sorted according to base priority, is shown in **FIG. 6A**. **FIGS. 6B** and **6D** show a modified list sorted responsive to demographics known about the mail recipient. In the examples shown, **FIG. 6B** is a modified ad list targeted at a sixteen-year-old male; while **FIG. 6D** is a modified ad list targeted at a 35-year-old female. Note, for instance, that the ads are skewed toward the interests of the particular demographic -**FIG. 6B** having two videogame listings in the top eight ads and **FIG. 6D** having the top two spots taken by clothing advertisements. **FIGS. 6C** and **6E** show the modified list of **FIGS. 6B** and **6D**, respectively, as further modified by ad affinity. In **FIG. 6C**, for instance, the VideoGame#2 ad was not rejected on affinity because the video game advertiser did not specify the rejection. However, the ClothingStore#1 ad was dropped from the list because the advertiser for ClothingStore#2 chose not to be listed with another clothing advertisement. Similarly, in **FIG. 6E**, the ClothingStore#1 advertisement in the top spot specified an affinity rejection of the ClothingStore#2 advertisement which was dropped from the list and the remaining advertisements consequently are moved up on the list.

Turning back to **FIG. 4**, the selected advertisement IDs, any value-added content the message and the recipient's address are sent to the mail object builder **92** so that the various components can be arranged on a page. An example of how certain selected advertisements can be arranged on a page of a printed mail object is shown in **FIG. 7A**. Once the type and designated number of advertisements are selected, they are placed on the mail object which in this case comprises a standard

sheet of letter-sized paper. **FIG. 7A** shows three advertisements arranged about the space containing the text of the electronic message. **FIG. 7B** shows a full-page ad view. **FIG. 7C** shows two half-page advertisements. And **FIG. 7D** shows one-half page and two quarter page advertisements. Each position and size on the page can

5 have an associated price that is applied to the mailing costs to supplement or completely eliminate the mailing costs required of the mail sender. Once arranged in a printable format, such as by constructing a file using any standard desktop publishing program, the mail object is sent along with a print order to the LPF designated in step **64**.

10 **FIG. 8** is an example of an LPF server, including a router **94** through which information is exchanged with the service pod **34** (**FIG. 2**) and mail object builder **92** (**FIG. 4**). An LPF server **96** includes a storage system on which advertisement graphics files are located associated with the advertisement ID numbers included with the mail object. Also included on LPF server is an attribute processor (not

15 shown) that periodically queries over the network bus **98** the status and capabilities of the print server **100** and other external and internal attributes requested by the service pod **34**. The print order from the mail object builder **92** (**FIG. 4**) is processed by the LPF server, including inserting advertisement and other graphics where indicated on the mail object document, to form a printable mail object. Such an

20 object is sent to the print server **100** where it is shunted to one of the printers **102**, **104** with the capability of printing the mail object as requested. Once printed out, the mail object is addressed and sealed in an envelope and carried to the local post office for delivery by normal land-based means to the intended mail recipient.

The LPF software will use all available techniques to achieve as much discounts as possible for each message. The messages will be sorted based on local delivery regulations and guidelines for maximum discounts and delivery accuracy. Such technologies are: CASS (Code Accuracy Support System) where  
5 each address is checked and verified to be a valid address, PAVE (Presort Accuracy, Validation, and Evaluation) to pre-sort the addresses for expedited delivery and maximum discount, ACS (Address Correction Service), and NCOA (National Change of Address).

Now that the individual components of the Zairmail system have been  
10 described, attention is given back to **FIG. 1**. The mail sender **12** is serviced by the Zairmail system **14** by allowing electronically composed messages to be sent to a recipient who can receive physical mail but may not have the ability to receive the electronic message in its native form. "Frequent user points" may be awarded based upon the number of messages sent, where points can be exchanged later for  
15 other goods and services. The mail sender **12** interacts with advertisers **20** by viewing the ads selected for placement on the mail object. The sender has the  
✓ option of previewing the ads and choosing if the ads should be sent or not to the recipients - thus, these ads are also viewed by the mail recipient **18**. Should the receiver purchase products from the advertise responsive to advertising directed to  
20 the mail recipient at the mail sender's behalf, the mail sender can receiver additions "frequent user points" or gifts. The value-added content suppliers **22** gain exposure and, in some cases, payment for the content they provide while the Zairmail system **14** gains increased mail volume by providing more attractive content for its mail

users. Advertisers **20** gain market data and impressions at their Web site while the Zairmail system gains ad content and, most importantly, exchanges ad exposure for money to supplement and sometimes exceed the costs of the printing and mailing costs.

5 In addition to using value-added content and artwork to drive volume, other promotional tools can be used. In one example, frequent mailer contests will award gifts to those users who mail at least a certain number of messages. In another example, each message sent through the system according to the invention can include a puzzle piece that can be collected and combined with other puzzle pieces  
10 to win a prize. This promotion can be applied to the mail sender as well.

**FIGS. 9A-9E** illustrate an example end user interface suitable for use to practice the e-mail sender aspect of one embodiment of the present invention for supplementing mailing costs. Referring to **FIG. 9A**, similar to e-mail end user interfaces known in the art, such as, for example, e-mail messaging window. The  
15 end user interface **106** includes menu **108** of "drop down" commands, i.e., "File", "Edit" and so forth menu **108** of action icons, a number of command buttons **112-116**, "Date/Time", "From", "To" and copy addressee fields **120-125**.

As previously described, the user composes an e-mail message and addresses the e-mail to a recipient at a particular domain, in the one embodiment  
20 shown, for example, recipient id "patients" at e-mail domain "zairmail.com". The e-mail message sender is identified by the "From" line of the e-mail message and the recipients' physical addresses and other demographic statistics are looked up in the user database **32**.

In the one embodiment shown in **FIG. 9A**, the "To" line of the e-mail message designates a group **122** of recipients, such as, for example, a number of recipients included in the group for Doctor Bill Chang's patient list, and this group **122** may be stored in the user database **32**. The sender (not shown) may compose the  
5 message, for example, a message notifying the recipients of the group **122** that the doctor's office has been moved, as an e-mail message. The message is sent as physical mailings to all the recipients included in the group **122**, sender's patient list, stored in the user database **32**.

Demographic information associated with recipients included within the group  
10 **122** may include information corresponding to the type of practice of Dr. Chang, such as, for example, Dr. Chang may be a pediatrician, and parents of youths may be the demographic information associated with the group **122**, and this demographic information may be may be stored in the recipient database **36** as well as the user database **32**. From the demographic information, the physical mailings  
15 of the message may include printing the message on decorative paper, envelopes, and so forth to promote a children oriented theme.

Shown in **FIG. 9A**, the costs associated with the printing and mailing of the message to the group is automatically determined and displayed as a "Pop-Up" window displaying \$75.00, such as, for example, cost window **134**, in accordance  
20 with the present invention. The user may select the "Send" command button **116**, and in response, the message to all of the recipients in the group **122** is sent. Furthermore, the user is billed for the mailings corresponding to the amount displayed in the cost window **134**. Alternatively, the user may be prompted for a

credit card number for payment. However, under the present invention, as shown in **FIG. 9B**, the user is offered an opportunity to have all or part of the mailing cost paid for by third party advertisements. In accordance with one embodiment of the present invention, an "Insert Ad" command button **115** is provided for user selection.

5 Upon selection, in response, the end user interface **106** presents an "Insert Ad pop-up" window **136** including the cost window **134**.

Shown in **FIG. 9B**, the "Insert Ad pop-up" window **136** presents an advertisement category **138**. The advertisement category **138** may be a default category based at least upon the demographic information associated with the recipients of the group **122**, such as, but not limited to, medicine for children category. Additionally presented in the "Insert Ad pop-up" window **136** is a category text entry box **140** into which an inputted advertisement category may be received, and in response, the advertisement category is changed from the default advertisement category **138** to an entered advertisement category, such as, but not limited to, safety equipment for children category. The user may choose the default advertisement category **138** or enter a category in the category text entry box **140**.

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Referring now to **FIG. 9C**, in response to the user selecting an advertisement category, the end user interface **106** presents a number of advertisers **142**. The advertisers **142** represent advertisers included within the selected advertisement category, such as, for example, the advertisement category, medicine for children, may include advertisers, such as, but not limited to, Johnson & Johnson Corporation.

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Shown in **FIG. 9D**, in response to the user selecting an advertiser, the end user interface **106** presents a number of advertisements **144** for "insertion" into the message, such as, for example, Tylenol Kidcare® and Children's Motrin Drops®. Illustrated in **FIG. 9D**, each advertisement **144** has a value associated with it, i.e.,  
5 each advertisement is worth a certain dollar amount to offset the costs associated with the mailing the message to the recipients of the group **122** displayed in the cost window **134**. As previously described, the value of the ads may be predetermined by determining that certain ads are to certain types of people worth more than others, i.e., "bid-up".

10 Finally, as illustrated in **FIG. 9E**, in response to the user selection of one or more of the advertisements **144**, the one or more advertisements **144** are "inserted" into the message. In the one embodiment shown in **FIG. 9E**, as the one or more advertisements are "inserted" and displayed as selected advertisements **146a-146d**, the cost associated with mailing the message is automatically reduced by the  
15 value(s) of the selected advertisements **146a-146d** displayed in the cost window **134**. In addition to the predetermined value of the advertisements **146a-146d**, as previously described, each position and size of the advertisement on the page may also have an associated price. For example, in **FIG. 9D**, the values of the "inserted" advertisements **146a-146d** are \$10.00, \$15.00, \$5.00, and \$5.00 respectively, and it  
20 follows that once the advertisements are inserted **146a-146d** (**FIG. 9E**), the cost window **134** displays reduced cost of \$40.00, i.e., \$75.00-(\$10.00+\$15.00+\$5.00+\$5.00). Furthermore, the sender may continue to "insert" more advertisements from the previously selected advertiser (in the event the initial



selection did not bring the residual cost to zero), change advertisers, or change categories and "insert" advertisements from different categories and advertisers. Note that in various embodiments, the mass mailer may even be given positive credits should the values of the selected advertisements exceed the mailing cost.

- 5 The credits may be saved for the next mailing, or otherwise compensated in a monetary or non-monetary manner.

In one embodiment, it is the selected advertisement itself that is actually "inserted" into the e-mail. In another embodiment, a link to an advertiser **20** (shown in **FIG. 1**) is "inserted", where the selected advertisement may be retrieved and  
10 inserted at printing time instead.

Alternatively, in one embodiment, coupons may accompany the advertisements. For example, as described with respect to the above advertisements, the "insertion" of a particular advertisement may automatically attach a coupon in the form of a predetermined discount for the particular product of  
15 the "inserted" advertisement. This coupon may be in the form of an electronic coupon (e-coupon), where the receiver may redeem the e-coupon when purchasing the product online, or alternatively, this coupon may be in the form of a printable coupon, which the recipient may print and physically take the coupon to a physical location to redeem the printable coupon for the product.

20 Furthermore, as described with respect to the advertisements above, coupons may be automatically attached to the message even if no advertisement is "inserted". The advertisements the coupons relate to may be based at least upon the previously "inserted" advertisements, or alternatively, based at least upon the

demographic information of the recipients, i.e., a coupon for 50% off toothpaste for a message to patients of a dental office.

Thus, it can be seen from the above description, under the manual "insertion" mode of operation, a user has full control in selecting the kind of advertisements that are included in the mailings and the amount of reduction of the costs associated with the mailings, or alternatively, the advertisement and/or coupons may be selected automatically. The selection process may be repeated as many times as the user desires. In one embodiment, the selected advertisements **146a-146d** are automatically arranged along the perimeters of the e-mail as shown in **FIG. 9E**.

Alternatively, the advertisements may be automatically arranged based at least upon each position and size on the page can have an associated price that is applied to the costs associated with the mailings.

As a result, a user may compose a message electronically and send the message to a number of recipients included within a group and have the recipients receive the message as physical mailings, while supplementing the cost associated with mailing the message by inserting advertisements into the message.

**FIG. 10** illustrates an address table suitable for sending a message to a number of recipients included within a group, in accordance with one embodiment of the present invention. Shown in **FIG. 10** is an address table **148** with columns for storing addressee group names **150**, the number of recipients within the group **152**, their e-mail addresses **154** (if applicable), their physical mailing addresses **156**, the demographics information associated with the recipients within the group **158**, and advantageously, the costs associated with mailing the message **160**. This table may

be stored in the user database **32** (shown in **FIG. 2**). Alternatively, in particular, the demographic information may also be stored in the recipient database **36**.

As shown in **FIG. 10**, a user need only select a previously stored address group name in the "To" line of the message of the end user interface **106** to send the message to a number of recipients of the group, such as, but not limited to, address group name **150** "Patients" corresponds to 100 recipients in the number in group column **152**, parents of children in the attributes/demographics column **158**, and mailing costs \$75.00 in the costs associated with mailing to the group column **160**. The data within the costs associated with mailing to the group column **160** is included within the cost menu **134**, which is automatically generated and displayed in response to the user selecting the previously stored address group name.

**FIG. 11** illustrates a number of sample tables suitable for storing the previously described category, advertiser, advertisement information, and values associated with each of the advertisement information, for practicing the present invention, in accordance with one embodiment. The example category table **162** includes column for category ID **166**, which corresponds to the attributes/demographics information column **158**. Furthermore, included within the table **162** are columns for receiving an entered category **168**, category description **170**, and other data **172** associated with the advertisement category. For example, the category description column **170** for the addressee group name "patients" may include medicine for children.

Shown in **FIG. 11**, are an advertiser table, which includes an advertiser ID column **176**, an advertiser name column **178**, a category ID column **180**, a financial

data column **182**, a value for advertiser column **184**, and other data for the advertiser table **186**. For example, the advertiser may place a high priority, i.e., the value for the advertiser column **184** is high, for category ID column **180** of medicine for children because of marketing. This may cause the advertiser to “bid-up” for  
5 advertisements within this category.

In **FIG. 11**, example advertisement table **188** includes columns **190** for storing advertisement identification, columns **192** and **194** for storing advertiser identifications of the advertisements and links to the locations where the advertisements may be retrieved, and column **196** for storing at least various  
10 statistical data associated with the publishing of the advertisements. Additionally, for the illustrated embodiment, advertisement table **188** also includes column **198** for storing the value associated with the advertisement. For example, certain advertisements may have a larger value than others, and in response to the user selecting the larger value advertisements, the user will reduce the costs associated  
15 with mailing the message by larger amounts.

As a result, a user may select the advertisements to “insert” in the message to reduce the amount of the costs associated with the mailing. Alternatively, in one embodiment, because the selected advertisements and their respective values are stored in tables, such as the ones described, the user only need to designate the  
20 group to which the message is to be sent, and the ad selector **74** automatically “inserts” the last selected advertisements stored within the exemplary tables **148**, **162**, **174**, and **188** shown in **FIGS. 10** and **11**. These exemplary tables **148**, **162**, **174**, and **188** may be stored in the ad compiler **66** (shown in **FIG. 4**).

FIG. 12 illustrates the operational flow of the relevant aspects for supplementing the costs associated with mailing a message by inserting advertisements into the message, in accordance with one embodiment of the present invention. Operating in conjunction with the service pod **34**, the ad compiler **66** receives an indication to send a message to a number of recipients **200**. The ad compiler **66** determines the monetary costs associated with sending the message to the number of recipients **202**, and in one embodiment, the monetary costs are determined from tables stored within the ad compiler **66**.

Once the monetary costs associated with sending the message to the number of recipients is determined, the ad compiler **66** determines if an insertion of an advertisement with a monetary value associated with the advertisement is received. **204**. If an insertion of the advertisement is received, the ad compiler **66** reduces the costs associated with mailing the message to the number of recipients by the monetary value associated with the inserted advertisement **206**, and the ad compiler **66** continues to determine if further insertions are received, thereby further reducing the costs by the further inserted advertisements.

However, if it is determined that an insertion of an advertisement with a monetary value associated with the advertisement is not received, the ad compiler **66** operates in conjunction with the advertisement databases **68**, **70**, and ad counter **72** to determine which advertisements will be printed, as previously described.

As a result, a mailing system integrating the advantages of both the Internet and the Web (World Wide Web) with that of the more traditional mail services to improve the dissemination of information from a sender to a large number of

recipients while supplementing the costs associated with the mailing transaction for the sender has been described.

While the present invention has been described in terms of the above illustrated embodiments, those skilled in the art will recognize that the invention is not limited to the embodiments described. The present invention can be practiced with modification and alteration within the spirit and scope of the appended claims. The description, is thus to be regarded as illustrative instead of restrictive on the present invention.

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